



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 032010-007 Project Number: 2009-09-004

Parent Company: The Scoular Company

Parent Company Address: 2027 Dodge St, Omaha, NE 68102

Installation Name: The Scoular Company - Harrisonville

Installation Number: 037-0050

Installation Address: 1209 Industrial Blvd, Harrisonville, MO 64701

Location Information: Cass County, S5, T44N, R31W

Application for Authority to Construct was made for:

A grain storage pile with associated equipment at the South Facility, and a portable receiving pit with associated handling equipment addition to the North Facility. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

MAR 15 2010

EFFECTIVE DATE

Kyra L Moore

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

The Scoular Company - Harrisonville
Cass County, S5, T44N, R31W

1. **Superseding Condition**
The conditions of this permit supersede all special conditions found in the previously issued construction permit 1099-014 issued by the Air Pollution Control Program.
2. **Emission Limitation**
 - A. The Scoular Company - Harrisonville shall emit less than 15.0 tons of particulate matter less than ten (10) microns in diameter (PM₁₀) in any consecutive 12-month period from the entire installation as defined in Table 1.
 - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 2.A.
3. **Haul Road Watering**
The Scoular Company - Harrisonville shall water haul roads whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary.
4. **Control Device Requirement - Mineral Oil System**
 - A. The Scoular Company - Harrisonville shall operate a dust suppression system that applies food grade mineral oil approved for direct contact with grain, on all grain processed through Grain Shipping by Rail (EU-02).
 - B. The dust suppression system shall be operated and maintained in accordance with the manufacturer's specifications. Oil shall be applied at a rate not less than 100 parts per million (0.01% by weight), and to the grain before it exits the rail load-out spout.
 - C. Attachment B or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 4.B.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

5. **Control Device Requirement - Skirt**
The Scoular Company - Harrisonville shall process all grain at Grain Shipping by Rail (EU-02) using a flexible skirt.
6. **Record Keeping and Reporting Requirements**
 - A. The Scoular Company - Harrisonville shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
 - B. The Scoular Company - Harrisonville shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2009-09-004
Installation ID Number: 037-0050
Permit Number:

The Scoular Company - Harrisonville
1209 Industrial Blvd.
Harrisonville, MO 64701

Complete: September 2, 2009

Parent Company:
The Scoular Company
2027 Dodge St.
Omaha, NE 68102

Cass County, S5, T44N, R31W

REVIEW SUMMARY

- The Scoular Company - Harrisonville has applied for authority to construct a grain storage pile with associated equipment as the South Facility, and a portable pit with associated handling equipment to the North Facility.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The HAPs of concern from handling distillers dried grains with solubles (DDGS) are ethyl alcohol and acetaldehyde, but in negligible amounts.
- None of the New Source Performance Standards (NSPS) apply to the installation. NSPS Subpart DD does not apply as the installation is a grain terminal elevator with permanent storage capacity less than 2.5 million bushels
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- A mineral oil dust suppression system and skirts on grain shipping via rail, and watering of haul roads are being used to control the PM and PM₁₀ emissions from the equipment in this permit.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of PM₁₀ are conditioned below de minimis levels. Conditioned potential emissions of PM are at minor source levels.
- This installation is located in Cass County, a maintenance area for ozone and an attainment area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed for this review. There is no NAAQS standard for PM.
- Emissions testing are not required for the equipment.
- No operating permit is required for the installation. Although conditioned PM emissions are at minor source levels, PM emissions are not used for intermediate and basic operating permit applicability.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

The Scoular Company operates a country grain elevator in Harrisonville, Missouri, herein referred to as Scoular. The existing north facility does not have a typical permanent storage bin, but has used a storage pile since 2001. In 2003 the Department of Natural Resources determined a construction permit application be submitted for continued use of the storage pile. No such application has been received for the Scoular north facility as a result of that determination. In 2009, Scoular demolished the north facility storage pile and constructed a new 1,000,000 bushel storage pile approximately two miles south, without obtaining a pre-construction prohibition waiver or construction permit. Scoular was issued a Notice of Violation for this construction. This new pile, referred to as a bunker, is not exempt from construction permitting under 10 CSR 10-6.061 “Construction Permit Exemptions” (3)(A)2.E.(c), as it is not a temporary installation and was not constructed as additional storage to handle an abundant harvest.

The existing north facility transfers grain from truck to rail. Currently there is no storage capacity or dryer. The unpaved haul road is 900 feet in length. The existing north facility is a de minimis source under construction permits and has a basic operating permit.

Table 1: Installation Defined

Emission Unit	Description	Bottlenecked Maximum Hourly Design Rate (tons)
North Facility		
EU-01	Hopper Truck Grain Receiving	600
EU-02	Grain Shipping (Rail)	450
EU-03	Container Truck Shipping	150
EU-04	Grain Receiving Haul Road	600
EU-05	Container Shipping Haul Road	150
Bunker (South Facility)		
EU-06	Hopper Truck Receiving	450
EU-07	Storage Pile Load-in	450
EU-08	Storage Pile Load-out	270
EU-09	Receiving Haul Road	450
EU-10	Shipping Haul Road	270
EU-11	Loader Activity	270

The following permits have been issued to The Scoular Company - Harrisonville from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0595-015	Construction permit - unloading to rail cars
0595-015A	Construction permit amendment for mineral oil dust suppression
0598-019	Construction permit amendment to permit 0595-015
OP	Basic operating permit, completed 2002
1099-014	Construction permit - new pit and conveyor
OP	General operating permit for grain facility, completed 2003
OP	Basic operating permit renewal, completed 2008

PROJECT DESCRIPTION

Scoular applied for authority to construct the new grain bunker and handle distiller's dried grains with solubles (DDGS) or grain from a portable pit. DDGS is the byproduct obtained after the removal of ethyl alcohol from grain used in ethanol production. As DDGS is dried at the ethanol production facility, most of the ethyl alcohol and other hazardous air pollutants are removed. However, a small amount may be present and released during transfer at Scoular, but these emissions are considered negligible. Particulate matter emission factors for DDGS are considered equal to particulate matter emission factors for grain, for this review.

The project was only to determine the emissions associated with the new bunker and DDGS handling, but by incorporating an installation wide emissions limit of less than 15.0 tons per year of PM₁₀, all emission sources have been re-evaluated.

EMISSIONS/CONTROLS EVALUATION

North Facility

The emission factors and control efficiencies for grain handling were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1 "Grain Elevators and Processes", May 2003. The emission factors and control efficiencies for haul roads were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 13.2.2 "Unpaved Roads", 2006.

Grain is received via hopper bottom trucks (EU-01) at the existing north facility, in two pits and one portable pit. The two stationary pits feed one continuous main leg that does not have drop points within. The leg is not considered an emission source because there are no drop points. The leg is rated at 15,000 bushels per hour (450 tons per hour) of grain. The leg is a bottleneck, as two receiving pits could receive grain faster than a shared 450 tons per hour. Scoular should submit a construction permit application before installing a larger capacity main leg. The emission factor for hopper bottom truck receiving was used for EU-01, but control efficiency for choke feeding was not applied, as the emission factor was determined under choke feeding. Insignificant amounts of grain could be received by straight truck.

The portable pit will receive DDGS or grain. Since DDGS, corn, beans, and wheat could be received, emissions were calculated assuming the densest material at 60 pounds per bushel. The portable pit's leg is rated at 5,000 bushels per hour (150 tons per hour) of grain. Scoular should submit a construction permit application before installing a larger capacity leg at the portable pit. All three pits can receive simultaneously.

There is no storage at the north facility; therefore all grain is immediately shipped via rail (EU-02) from the two stationary pits and by container truck (EU-03) from the portable pit. The maximum hourly design rates (MHDR) of both shipping types are bottlenecked by their respective receiving/conveying rates. All grain shipped via rail is processed through a mineral oil application system and skirts on the load-out spout. Since high levels of control of particulate emissions from a mineral oil system occur downstream of the oil application point, typically after several grain drop/transfer points, and the number of transfer points is zero, a relatively low control efficiency was applied for mineral oil of 60 percent. With the combined effects of the skirts a total control efficiency of 80 percent was used for all grain shipped via rail. No controls are associated with the portable pit and container truck shipping.

Bunker (South Facility)

Grain is received at the new bunker in two receiving pits (EU-06), which share one main leg. An insignificant amount of grain may be received via straight truck. The main leg for the bunker can transfer 15,000 bushels per hour (450 tons per hour), and is the bottleneck of the receiving rate. Emissions for the bunker load-in were calculated using the bin vent emission factors for PM and PM₁₀. Although there is no storage bin, these emission factors were chosen because the process of unloading grain into a pile is similar to that of a conveyor unloading grain into a bin. The drop point equation from EPA AP-42 Section 13.2.4 "Aggregate Handling and Storage Piles", 2006 was not used because this equation was developed from testing aggregate handling, not grain. Emissions from wind erosion are likely to occur, but are negligible due to daily covering activities.

All grain in the bunker must be unloaded by a wheeled loader (EU-11) dumping directly to semi truck. There is no auger or conveyor. The loader has a bucket volume of approximately seven cubic yards or 150 bushels. Process emissions were calculated as one bucket of grain dumped per minute for a MHDR of 270 tons per hour, using the emission factors for grain shipping via truck. The loader is a bottleneck.

Haul road emissions were calculated assuming 8.3 percent silt content, and all trucks at 80,000 pounds gross vehicle weight. This full semi weight approximates to 950 bushels of grain per truck, if an empty truck and trailer weigh 23,000 pounds. A 50 percent control efficiency is applied to all haul roads for watering. Driving emissions from the wheeled loader were also approximated using 8.3 percent silt content, but without control.

Existing Potential Emissions were cited from construction permit 1099-014. Existing

Actual Emissions were reported in the 2008 Emissions Inventory Questionnaire. Unconditioned Potential Emissions of the Installation represent all processes of the entire installation, assuming continuous operation (8,760 hours per year). Conditioned Potential Emissions of the Installation represent the conditioned potential emissions of the entire installation. PM₁₀ emissions are limited to avoid dispersion modeling, and PM emissions are proportionately reduced. The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2008 EIQ)	Unconditioned Potential Emissions of the Installation	Conditioned Potential Emissions of the Installation
PM ₁₀	15.0	30.00	2.44	153.25	<15.0
PM	25.0	N/D	N/D	557.54	¹ 54.57
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	² N/D	N/D

N/A = Not Applicable; N/D = Not Determined

¹ Indirect limit

² Negligible, therefore not determined

Potential emissions of the entire installation are 153.25 and 557.54 tons per year of PM₁₀ and PM, respectively, but limited to less than 15.0 tons per year of PM₁₀. Proportionately, PM emissions are indirectly limited to less than 54.57 tons per year.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels. Conditioned potential emissions of PM are at minor source levels. Citing an Air Pollution Control Program memorandum dated April 27, 1998, "the Air Program will not use PM emissions as the basis for Intermediate and Basic (operating) Permit applicability. The Air Program will continue to use PM₁₀ for (operating) permit applicability." PM₁₀ emissions are conditioned to below the de minimis level and no NSPS, NESHAP, or MACT applies, therefore no operating permit is needed.

APPLICABLE REQUIREMENTS

The Scoular Company - Harrisonville shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-2.070

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

David Little
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 1, 2009, received September 2, 2009, designating The Scoular Company as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated September 18, 2009.
- "Variation in Particle Size and Bulk Density of Distiller's Dried Grains with Solubles (DDGS) Produced by "New Generation" Ethanol Plants in Minnesota, South Dakota, and Missouri". Knott, Shurson, and Goihl. University of Minnesota.
- Air Pollution Control Program Memorandum. April 27, 1998. "Particulate Matter Clarification". Raymond, Randy E.

Attachment A - Installation PM₁₀ Compliance Worksheet

The Scoular Company - Harrisonville
 Cass County, S5, T44N, R31W
 Project Number: 2009-09-004
 Installation ID Number: 037-0050
 Permit Number: _____

This sheet covers the month of _____ . (Copy this sheet as needed.)
 (month, year)

Emission Description	Throughput (tons)	Emission Factor (pounds of PM ₁₀ per ton)	¹ Emissions
North Facility			
Total Grain/DDGS Received		0.0138	
Grain/DDGS Shipped by Container Truck		0.0350	
Grain Shipped by Rail		0.0004	
Bunker			
Grain Received		0.0221	
Grain Shipped		0.0417	
²Monthly PM₁₀ Emissions (pounds)			
³Monthly PM₁₀ Emissions (tons)			
⁴Cumulative PM₁₀ Emissions (tons)			

¹ Emissions calculated by multiplying the Throughput by the respective Emission Factor.

² Monthly PM₁₀ Emissions in pounds calculated by summing the five Emissions.

³ Monthly PM₁₀ Emissions in tons calculated by dividing the Monthly PM₁₀ Emissions in pounds by 2,000.

⁴ Cumulative PM₁₀ Emissions calculated by summing this month's PM₁₀ Emissions in tons with the previous eleven month's PM₁₀ Emissions in tons. A total of less than 15.0 tons is necessary for compliance.

Mr. Andy Determan
Plant Manager
The Scoular Company - Harrisonville
1209 Industrial Blvd.
Harrisonville, MO 64701

RE: New Source Review Permit - Project Number: 2009-09-004

Dear Mr. Determan:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact David Little, at the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:dll

Enclosures

c: Kansas City Regional Office
PAMS File: 2009-09-004

Permit Number: